

An
Inaugural Essay,
on

Haemoptysis.

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of the
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of the
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For
the Degree of
Doctor of Medicine

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passed. March 6. 1819.

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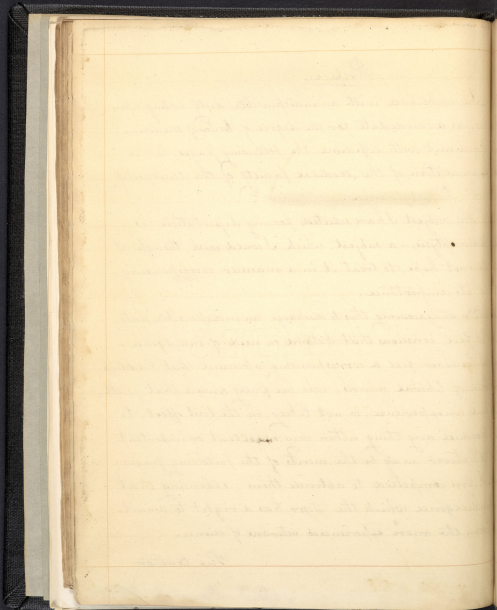
Preface.

In compliance with an indispensable duty resting upon me, as a candidate for the degree of Doctor of Medicine, I submit with diffidence, the following pages, to the examination of the Medical Faculty of the University of Pennsylvania.

The subject I have selected for my dissertation is Haemoptysis;—a subject, which I could wish, though I cannot hope, to treat it in a manner corresponding to its importance.

In endeavouring thus to discharge an indispensable duty, I feel conscious that I stand in need of indulgence. I however feel a corresponding assurance that I address men of liberal minds, who are fully aware that youthful inexperience, is not likely, in the first effort, to produce any thing either very ~~excellent~~ or important. Whatever may be the merits of the following pages; I am compelled to abtude them; claiming that indulgence which the Sipro has a right to await from the more experienced veterans of science.

The Author



Haemoptysis.

Next to epistaxis, bleeding from the lungs is the most frequent hemorrhage. Indeed, when we reflect on the size and number of bloodvessels entering the lungs, and on their minute ramifications, being delicately dispersed on the surface of the air cells; and involved in a cellular substance, that can admit of but little resistance, the frequency of hemorrhage from that viscus cannot be wondered at.

It is not always easy to ascertain the source of the hemorrhage, when the blood is discharged through the mouth. When, however after some affections of the lungs, blood is brought up by coughing, there can be but little doubt, but what it comes from the lungs. Frequently cases are met with, where it will be necessary to take into consideration, a variety of circumstances, to enable us to determine, whether it proceeds, from the Larynx, the adjoining cavities of the nose, the stomach or the lungs.

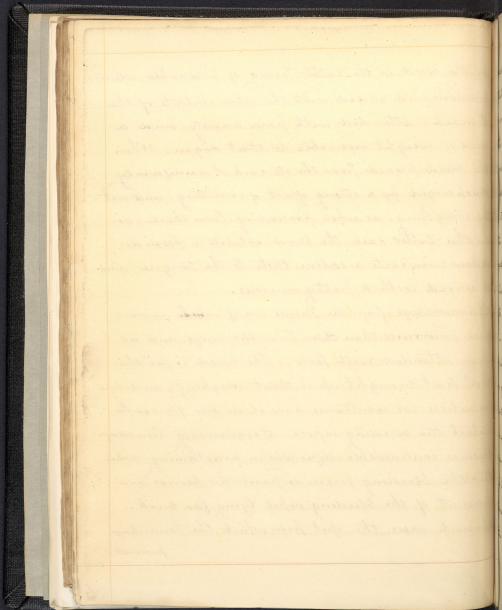
Haemoptysis may be distinguished from haematemesis,

by

* Richter.

by the blood in the latter being of a darker colour, grumous and mixed with the other contents of the stomach; attended with pain anxiety, and a sense of weight referable to that organ. When the blood proceeds from the stomach it is uniformly discharged by a strong effort of vomiting, and not by coughing, as when proceeding from the lungs. In this latter case, the blood exhibits a floride colour; imparts a saline taste to the tongue, and is mixed with a frothy mucus.

Hæmorrhage from the fauces are of ~~much~~ more rare occurrence than those from the lungs, and seldom attended with fever. The blood is for the most part brought up without coughing, and by inspection, we sometimes have it in our power, to detect the bleeding vessels. Occasionally however, there is considerable difficulty in ascertaining, whether the bleeding proceeds from the fauces on account of the bleeding vessel lying far back. In such cases, the spot from which the hæmorrhage
proceeds



proceeds can not be brought into view; and the blood irritating the glottis, produces a cough by which it is made to resemble a haemoptysis. - In a case of this kind, we must found our diagnosis on the nature of the occasional causes, and upon the absence or presence of the symptoms of haemoptysis; that is we must observe, whether local pain in the breast be present, whether the blood discharged be black and partly coagulated, or whether it exhibits a frothy crimson appearance.

In the aetiology of haemoptysis a particular regard must in the first place be had to the predisposition, which may subsist in the system to it. There are few other forms of disease, in which this predisposition is more evidently noticed than in Haemoptysis. It consists, in an excessive irritability and sensibility of the whole vascular system; which is particularly conspicuous in the lungs and in the respiratory organs in general; combined with organic weakness of these parts. This condition of the system is most frequently entailed from
poison

parents upon the offspring. It is sometimes however acquired after birth. In the first case the predisposition depends upon what has been called physical conformation. Malconformation of the thorax, constitutes one of the most conspicuous causes to hemorrhage from the lungs. Persons predisposed in this way, are generally of a sanguine temperament; of a happy genius; very irritable; passionate and active, though seldom capable of much perseverance, in either physical or mental exertions. The hair and complexion is fair, the eyes mostly blue, the skin white and soft; the cheeks and lips are beautifully red; teeth often as white as milk; a fine and somewhat shrill voice; a projecting larynx &c. &c.

Certain trades often act as predisposing causes to Haemoptoeis. Taylors, Shoemakers, Weavers, Chemists &c. are more subject to it (ceteris paribus) than men of other employments. Among the other causes which predispose to this disease, may be reckoned sudden growth about the age of puberty; intemperance
in

in eating and drinking, plethora, suppression of
some customary evacuations, repelled eruptions,
tubercles of the lungs catarrh &c. &c.

Haemoptysis may arise at any period of life; al-
though it more frequently affects the young than
the old. Its exciting causes, are; stimulating
passions, external violence, violent exertions of the
lungs, as in singing, laughing, hallooing and
blowing wind instruments. Sudden vicissitude
from heat to cold, and vice versa, diminution
of the weight of the atmosphere, especially when
concurring with exercise; and great heat or
perspiration from clothes.

Symptoms

Haemoptysis is divided by Doctor Cullen into active
and passive. In the former the arterial system is in
a state of increased, and in the latter, in a state
of decreased excitement. The celebrated Richter has
added a third, which he calls Haemoptysis Spasmodica;

I am however of the opinion, that this division of
Richter is not attended with any practical utility;
at all events, it does not seem to lead to any new
or more successful mode of treatment, than that
which is deducible from the division given by Cullen.
The disease sometimes comes on with a sense of weight
and anxiety in the breast; more or less pain in
the breast, some uneasiness under the stomach, and
frequently, a saltish taste is perceived in the
mouth; a degree of irritation is felt about the
upper part of the larynx, which occasions hawking
and coughing, and blood of a florid red colour is
brought up, producing a noise similar to air
passing through a fluid. At other times its first stage
is ushered in with shiverings, coldness of the extremities,
pains in the back and loins, costiveness, flatulency and
loptitude. The blood brought up at first, is generally
in small quantities, and causes but very little uneasiness.
At other times however it appears moderately,
and in large quantities; from the very first

caput sanguinis

commencement; not preceded by the promontory symptoms.

The pulse in this state of the disease, is frequent, quick and tense; sometimes full and round, but small strokes.

The bleeding seldom takes place to such a degree, as to prove fatal at once; but if the disease has continued for any length of time, or the discharge been profuse; the pulse becomes small and frequent, the difficulty of breathing continues to an alarming degree; the strength of the patient, becomes greatly diminished, the face pale, the extremities cold, syncope tremors, convulsions, and lastly death.

Hæmoptoe from the lungs are dangerous in proportion to the causes which bring them on, the size of the vessel ruptured; the state of the constitution of the patient; and the means which are employed to check it.

When from acute inflammation of the lungs, if not in large quantities; it seldom proves fatal; but on the contrary often terminates favourably: the lungs relieving themselves, of the violence of inflammation.

When

...not furnished by the present supply
...in this state of the disease is frequently
...sometimes found in some but not in others
...the following section takes place to such an extent as
...to cause failure at times; but if the disease has been
...usually for any length of time or the like a good
...the progress; the pulse becomes more and frequent
...difficulty of breathing continues to an alarming
...the state of the patient, however greatly
...the face pale the extremities cold & cyanotic
...as a last result.

...from the lungs are transpired in the
...to the cause which bring them on, the signs
...the rapid respiration; the state of the circulation
...the patient, since the means which are employed
...it.

...from want in fermentation of the lungs of
...in large quantities, it seldom proves fatal;
...in the history of the disease the following
...lungs receiving themselves of the same nature

When from metastasis, as from suppression of Hemorrhoids, or catarrhia; it seldom proves dangerous unless, the Hemorrhage is profuse and of some continuance. When from tubercles, it generally terminates into phthisis pulmonalis.

Methods of Cure.

In the treatment of hemorrhage from the lungs, we must be guided by the state of the system. When therefore we are called to a patient, we should first endeavour to ascertain, whether the Hemorrhage be of the active or passive kind; or in other words whether the patient labours under a sthenic, or asthenic diathesis. The remedies to be employed in this disease, may therefore be divided under two heads; such as are proper in its active; and such as are suitable in its passive state. If in a case of Hemorrhage from the lungs, we find the patient's skin hot, if he is feverish, with a hard and frequent pulse; we must treat the disease as a sthenic case, and use bleeding from the arm, or even jugular vein

vein, promptly and copiously. In the use of venesection, we must here, as in all other cases be governed by the state of the pulse, and repeat it as often as the system will bear it, until the symptoms are relieved.

In addition to bleeding, we must put our patient upon a general antiphlogistic regimen; he must be strictly forbidden to talk; to be kept in a quiet and cool chamber; and if a cough be present, un-irritating pectoral medicines must be exhibited.

After these remedies, or even in conjunction with them, we may resort to the use of astringents.

Common Salt.

We are indebted to the late Doctor Rush for the introduction of this remedy into regular practice.

It may be given in doses of a tablespoonfull, and repeated as often as is necessary. It seems to act on the fœces, and extend its action to the bronchial vessels. It is best given in a dry state.

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Cold applications,

Doctor Darwin mentions, "One immersion in cold water, or a sudden sprinkling all over with cold water, would probably stop a pulmonary hemorrhage." This is perhaps venturing too far, with respect to the cold applications. Nevertheless it must be confessed that cold applications, in their proper time and place, are invaluable remedies in checking hemorrhage. Clothes dipped in cold water, and applied to the thorax, axilla, and scrotum; is productive of very beneficial effects. It should however never supersede venesection. Wilmot and Bursarius, recommend large draughts of cold water; the coldness of the water is to be gradually increased, untill seen pieces of ice are swallowed. I believe however, that cold applications to the genitals &c. is the most effectual mode of acquiring the benefits of a low temperature.

Saccharum Saturni,

This is an article, that stands in high repute as a medicine, in checking hemorrhage. To the late Doctor Barton, the merit is due, for the restoration of this medicine. His experience was very extensive with it, and he speaks in highly in favour of this medicine. He mentions "In many cases of such bleeding, but especially in those from the Uterus, intestines and Lungs, I have exhibited the acetate of lead, generally in combination with a pittance of Opium, and sometimes with a portion of Spicacuanha. Seldom have I been disappointed in my expectations of benefit from the medicine, which of all the articles of the materia medica, seems to me to possess the greatest command over the movement of the arterial system. In no instance have I perceived any dangerous effects, and rarely any temporary inconvenience, from the employment of lead." The best mode of giving the acetate of lead; is to combine it with opium, in the proportion of two grains of the former

On the proportion of loss

It is an article that stands in high repute as a source
of a striking advantage. In the first place, it
is the most direct for the reduction of the loss.
This opinion was very common until now.
It is only in favour of the insurance. It is
in many cases of such business, but not in
those from the latter instances and long I have
noticed the extent of loss, especially in com-
mon with a portion of business, and sometimes
with a portion of the business. I believe I have
been disappointed in my expectations of benefit
from the insurance, which of all the articles of the
business, seems to me to have the greatest
importance over the movement of the business system.
We must have a business and a business
and we must have any business and a business
and the employment of loss? The business of
the business of loss is a business with
the proportion of the business of the
business.

former, with half a grain of the latter. This dose may be exhibited, and repeated every one, two or three hours, according to the urgency of the case, until the bleeding is checked. The above dose may however safely be increased; if the case demands it; without producing any deleterious effects. Professor Chapman tells us that he has given it, to the extent of one scruple at a dose, without any bad effects resulting from it.

Emetics

Although cases are on record; where spontaneous vomiting, has cured hemorrhage from the lungs; yet practitioners seldom employ them in the active state of the disease. Doctor Cullen upon the authority of Bryon Robinson exhibited emetics in several cases of haemoptysis with advantage. In one case it increased the hemorrhage to such an alarming degree as to deter him from further trials of them. In slow hemorrhage, they may however be employed with advantage, and especially when it occurs
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Protest

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from tubercles. Although in chronic hæmoptysis emetics may often prove beneficial; it can not be doubted that in acute bleeding from the lungs, they must be generally dangerous; and ought therefore, unless the indication to their use be very strong, never to be employed. When the emetic remedies prove occasionally serviceable in acute hæmorrhage; I believe it always depends upon their nauseating effects. Doctor Moreley relates several cases, in which his vitriolic solution administered, in nauseating doses every eight hours, produced the happiest effects. The advantages of this medicine, in the cases mentioned by Doctor Moreley, were undoubtedly owing in part to its astringent virtues; its producing nausea, also contributed to the same beneficial end.

Speaculanka, combined with opium; Professor Chopman informs us, is an invaluable remedy; not only in this species of hæmorrhage; but also, in uterine hæmorrhage. The medicine is to
be

to be administered, so as to keep up constant nausea, but not to induce vomiting, as it might prove mischievous. The doctor's prescription is as follows,

R Pulvis Ipecacuanha ii ss

— Opium ʒ ss

Mf. either given in powder, or made into a pill, and repeated every two, three or four hours.

Digitalis

This article, is by some writers, recommended as a valuable remedy in Haemoptysis. Doctor Ferriar has the highest opinion of this medicine in the cure of Haemoptysis. From its power of diminishing arterial action, it may in some cases be productive of good effects. Richter speaks favourably of this medicine. He gave it in combination with opium and calomel; and says that he has often derived considerable advantage from digitalis given in this way. He observes that the more evident spasmodic symptoms are present, the
less

less advantageous is this medicine. Its formula is

R Gum Opium

Calomel

Puls digitalis $\bar{a} \bar{a}$ X gr.

M. fl. dividenda in Chartulas No. X one of which is to be given every hour or two.

Blisters

After bleeding, blisters are important remedies; they have been efficacious in this disease, by diverting morbid excitement from the lungs, to a part less essential to life. Some recommend them to be applied to the neck, or wrist; but the most proper place, is perhaps, to apply them over the chest; as the act in proportion to their proximity to the part

Opium.

When, the bleeding is aggravated, and kept up by coughing; opium administered in small and repeated doses, is an invaluable remedy, in

hemoptoe

hemorrhage from the lungs. Richter, and the generality of the late modern German authors, recommend, the extract of hyosiamus in preference to opium.

It is ordered by Hoffman, 3 grains every hour.

Various other remedies are recommended, by different writers, in the cure of haemoptysis; such as neutral Sals, nitrate of potash &c. Nitrate of potash is perhaps the most effectual. Doctor Caldwell mentions nitre given in large doses, in combination, with one sixth, or eighth of a grain of tartarized antimony, is very beneficial in haemoptysis. Hartman, recommends nitre in this disease, in the highest terms. His mode of exhibiting it, is to make a saturated solution of nitre in bromide. The dose is a tablespoon full every half hour.

Sulphuric acid, in doses of twenty drops, often repeated; I have been informed, has in some cases had a very happy effect in checking hemorrhage from the lungs. The phosphoric acid has

also

also been highly recommended (Huflands Journal
page 153) in the cure of hæmoptysis - The
formula in the above quoted work is this

Rx Acid phosphor. ʒi
Aqua font. distil. ʒss
Syr. cerasor: nigror ʒij

M.f. From 10 to 30 drops every 15 minutes.

Fear from its effects in decreasing the action of
the heart, and arteries, from this poison interrupt-
ing the flow of blood from a vein in the operation
of phlebotomy; we might be led to suppose it to
be beneficial in checking hæmorrhage from the
lungs, but as we cannot regulate it in its effect,
I consider it as an ambiguous remedy in this
disease.

Throughout the whole course of our treatment
in this form of the disease; we must enjoyn rest
and the shoulders somewhat elevated; conversation
should be avoided, the bowels should be kept

in a soluble state, without active purging;
and the patient should be lightly covered with
wool clothes.

Passive hemorrhage from the lungs.

Here the indication is to restore tone to the blood-
vessels. Among the first remedies to be mentioned,
is opium. The dose must be accommodated to the
state of the system, and ^{often} repeated. The second
dose should always be given before the first
has lost its influence.

Peruvian bark will be found a valuable
remedy in this form of the disease. Given either
alone, or combined with iron.

Porter is said to have cured Haemoptysis alone;
it is highly entitled to our notice, as being a
liquid which the stomach retains when
all others are offensive to it.

Sulphuric acid administered in small doses,
and often repeated, either alone, or in combination
with

with some of the above mentioned articles; or in the form of Elixir of vitriol, seems to answer well in this form of the disease.

Port wine, when it does not prove disagreeable to the stomach, may be administered, and with a happy effect.

These remedies are to be aided, by moderate exercise; a light nourishing diet, the patient should eat often, and but little at a time that an equable excitement may be ~~kept~~ preserved in the stomach, and the system not suffer from alternate, and inaction of that viscus.

I will now subjoin a case of hemorrhage from the lungs, which came under my notice.

Case.

J. P. A young man aged about nineteen, and of a plethoric constitution; on the twenty second of January 1818 came to me and informed me that he had been subject to several bleedings from

the

the lungs; and that he felt the same symptoms at that time, which preceded the previous bleedings from the lungs. After examination, I found his pulse active, his bowels costive and he complained of some difficulty of breathing, a slight pain in his head &c &c. I immediately drew from his arm fourteen ounces of blood; and gave him a dose of Epsom salts. I saw him next day, he informed me he felt much better, his pulse was natural; I now gave him the clover powder in order to determine to the surface and equalize the circulation, directed him to abstain from all kinds of stimulating food and drink, avoid all violent exertions of the lungs and to take moderate exercise. On the 24th I saw him again he was now much better, his difficulty of breathing and pain in the head had all subsided; his bowels were regular, and all other symptoms had left him. I now requested him to
pay

pay strict attention to his manner of living, to avoid all kinds of excess, and occasionally to take a purge: which he continued to do for sometime; untill he considered himself out of all danger, and after wards neglected it. He continued well, untill towards the latter part of March, at which time he was attacked with a cough, which gradually increased in violence. On the 26th of March in the night he was attacked with a violent spasmodic cough, and straining of the lungs; this after some continuance brought on bleeding from the lungs. I saw him about four hours after the bleeding had made its first appearance; during which time he had lost nearly three pints of blood; and the bleeding still continued to an alarming degree, and threatened the speedy death of the patient. I found his pulse active, I immediately drew from his arm twelve ounces of blood; and gave him two grains of the
sugar

Sugar of lead, combined with half a grain of
of opium. In half an hour I repeated the medicine
and took eight ounces more blood from his arm.

I now applied rags dipped in cold water to his
ventrum and axilla. The bleeding now gradually
diminished, and his pulse became slow. Two hours
after the last dose, I gave him another and repea-
ted the cold applications; by this time the bee-
ding had nearly ceased, and in one hour it
stopped entirely. I now took off the cold appli-
cations, and applied a blister over his breast; I
gave him another dose of the lead and opium,
and left him a dose to be taken in four hours.
24th I saw him again, bleeding had not
returned, and his cough was somewhat relieved.

I now gave him for his cough 30 drops of
liquor Camclanum, and directed him to
take during that day two doses more of the
Camclanum, and one dose of the acetate
of lead and opium. 28th His cough
much

much relieved, and felt in every respect better.

He now only complained of weakness, he was now allowed some light nourishing diet, and directed to take 20 drops of Lanthanum with as many of sweet spirits of nitre four times a day - and other remedies were prescribed to restore his strength, which was accomplished in a short time. I now directed him to take occasionally a cooling purge, which he did, and never had a return of the hemorrhage, but remained well ever since.

I have thus concluded a short essay on the causes and cure of haemoptysis, as it was a matter of necessity, and not of choice its imperfections; I hope, will be viewed with an eye of liberal indulgence. —

